

MODIS TECHNICAL TEAM MEETING

April 11, 1996

The MODIS Technical Team Meeting was chaired by Vince Salomonson. Present were Barbara Conboy, David Herring, Steve Ungar, Harry Montgomery, Bob Murphy, Dorothy Hall, Dick Weber, Bruce Guenther, and Barbara Putney.

1.0 SCHEDULE OF EVENTS

April 15	Quarterly Reports due to Barbara Conboy
April 30	MODIS Programmers' Forum at GSFC
April 30	MCST-Science Team Precursor Meeting at GSFC
May 1 - 2	MODIS Software Acceptance Review (tentative dates)
May 1 - 3	MODIS Science Team Meeting at GSFC
May 16 - 17	SWAMP Land Discipline Review
June 11 - 13	Primary Productivity Workshop at GSFC

2.0 MINUTES OF THE MEETING

2.1 MODIS Project Reports

Weber reported that the aft optics assembly of the MODIS Protoflight Model (PFM) underwent vibration testings last week at El Segundo. There was no visible damage following the tests; however, SBRS is still evaluating the data.

Weber stated that SBRS is still having a problem receiving working hybrids from the vendor.

2.1.1 SRCA Concerns

Montgomery asked if the SRCA issue is being addressed by Project. Weber responded that some tests were run at GSFC and it was determined that two of the halogen bulbs died after about 500 hours. Project had hopes that the SRCA bulbs will last at least 1,000 hours after launch, and eight bulbs continue to operate at 900 hours. Weber reported that the bulbs' outputs are slowly changing over time, so that they cannot be used for long-term radiometric calibration. The primary planned use has been for within-orbit calibration, and they will work well for this.

Guenther explained that each calibration mode for MODIS's spectral and spatial has detectors that accommodate small, short-term variations. The SRCA was built knowing that the lamps would be subject to small degradations in output over the time of their use. The detectors will accommodate those changes as long as they are small.

2.1.2 Solar Diffuser Tests

Weber reported that Stuart Biggar and Eugene Waluschka measured the mirror flatness of the heliostat planned for use by SBRs in the upcoming solar diffuser test and Biggar concluded that it isn't flat enough. They reflected sunlight onto a white wall and found that there is at least a 1 percent variation in intensity across the surface of the mirror, which is visible to the naked eye. Biggar feels that the mirror is not adequate for the planned solar diffuser test.

Weber feels that this concern requires immediate consideration because SBRs would like to insert a window into their clean room to allow sunlight in. However, Weber feels that SBRs should not spend the time and resources to add the window and risk possible contamination if the mirrors required to do the tests are not adequate.

2.1.3 Pattern Noise Specification

Weber reported that he received some plots from Steve Ungar with superimposed pattern noise. These plots will allow GSFC to qualify the pattern noise specification.

2.1.4 New Flight Model Optics

Weber reported that SBRs now has the new low-scatter Flight Model-1 near infrared optics in house.

2.1.5 Electronic Submission of CDRL Documents

Weber announced that SBRs is in the process of converting a large fraction of their document submittals to an electronic format.

2.2 MCST Reports

Guenther reported that the week after the Quarterly Management Review at SBRs, Ed Knight stayed to work with them on the Ground Support Equipment software, the test data processing software, the SBRs TAC, and documentation for all of the above.

Guenther stated that there is a good probability that EOS Project will ask for greater involvement from MCST at SBRs during the testing phase. He said that if a formal request comes from Project, then MCST will evaluate it and propose a possible solution. Weber told the Team that Tom Pagano, of SBRs, recently praised the efforts of MCST at SBRs.

Guenther announced that MCST representatives will attend the Flight Operations Workshop at Valley Forge next week.

2.2.1 Concerns on the Earth View Aperture Door

According to Guenther, George Daelemans and Dan Powers recently delivered a report on the temperature of the MODIS Earth-view aperture door. They found

that the door has a view factor which does illuminate the scan mirror at some portions of its scan. Guenther stated that, depending upon the design choices made for thermal control, the temperature of the Earth-view aperture door could get as hot as 140°C, which would present a problem for the paint, as well as a significant radiometry problem. MCST is still researching this problem and will follow carefully the approaches provided by SBRs and the Project on this concern.

2.2.2 Spacecraft Maneuver Revisited

Montgomery reiterated the fact that spacecraft maneuvers are a critical element in MCST calibration plans. He inquired as to the status of the spacecraft maneuver discussions. Salomonson responded that the issue is still unresolved.

Guenther proffered that the spacecraft maneuvers must be done, there is no recourse for calibration if they are not. Salomonson stated that he agrees that the maneuvers are very important.

2.3 SDST Reports

Putney announced that all MODIS Beta Software was successfully delivered, and integrated and tested at the GSFC DAAC on schedule. SDST is still evaluating its lessons learned from the exercise. She stated that MCST delivered its Version 1 Level 1B software today. Additionally, Paul Menzel delivered MOD35, Cloud Masks, and Eric Vermote delivered MOD09/13, Surface Reflectance/Vegetation Indices.

Putney reported that the Version 1 Software requirements specifications will go out to the Science Team later this week. The document has been reviewed by the discipline group leaders, as well as MCST and SDST.

Putney reported that some optimization has occurred in two MODIS products. The MOD04S Aerosol product CPU requirement has been reduced by 44 percent through the work of an ESDIS optimization contract. The Land Discipline Group has significantly reduced the CPU required in their beta delivered pointer program. These are both tall poles in the MODIS processing.

2.4 ALEIS Feasibility Study

Hall announced that a feasibility analysis is being done on possibly building an Advanced Linear Etalon Imaging Spectrometer (ALEIS). If launched, data from this instrument may be used to help validate some future MODIS products, such as the snow cover product. Hall stated that Marcos Sirota, of University of Maryland Baltimore County (UMBC), is requesting \$500K to \$800K to build the instrument at GSFC. Sirota hopes to fly ALEIS on the Argentinean SAC-C satellite.

2.5 New MODIS Science Team Members Selected

Murphy announced that the new MODIS Science Team Member recommendations were presented to, and accepted by, Bob Harriss recently. Award letters will be sent out next week. Murphy stated that the new members will deliver presentations of their research objectives at the upcoming Science Team Meeting.

2.6 MODIS Bands 1 and 2

Murphy summarized the status of the inquiry into the possible saturation of Bands 1 and 2. Eric Vermote and Harry Montgomery have partially reconstructed the logic leading to the spec. Murphy still thinks that the specification of Lmax for those bands may be set too high. (The Band 1 Lmax is brighter than clouds, to allow for specular reflection. It is not clear where the Band 2 Lmax specification comes from.) Saturation of Bands 1 and 2 can be avoided, but the fix would decrease the signal level for all channels on the NIR focal plane. This may impact band 18, which is used to characterize clouds. Murphy will meet with Yoram Kaufman and Montgomery to resolve this issue.

2.7 MAST Reports

Herring presented the final agenda for the MODIS Science Team Meeting. It is now available via the World Wide Web at <http://modarch.gsfc.nasa.gov/MODIS/May96Agenda.html>.

3.0 ACTION ITEMS

1. *R. Murphy*: Meet with Yoram Kaufman and Harry Montgomery to resolve the saturation issue and determine whether it impacts the atmospheric narrow band filter.